

**REMARKS**

Applicants are pleased to note the identification of allowable subject matter by the Examiner in the now pending patent application, specifically, Claim 4. Claims 1 and 3-7 are now pending in the application, of which Claim 1 is independent. The following comments address all stated grounds or rejection and place the presently pending claims, as identified above, in condition for allowance.

**Claim Rejections under 35 U.S.C. § 112**

Claim 1 is rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. More specifically, the gain coupling term defined by “ $\text{Im}(kL)$ ” is rejected for failing to define “ $\text{Im}$ ” and failing to identify each element of the term “ $\text{Im}(kL)$ ”.

Applicant contends  $\text{Im}(kL)$  is a well known term of art within the laser sciences and one skilled in the art would therefore readily recognize and understand the meaning and scope of such a term. More specifically,  $\text{Im}(x)$  is a well known complex number notation. Further, “ $kL$ ” is referred to in the art as “kappa ell”. Likewise, “ $L$ ” is known in the art as the length of the laser cavity while “ $k$ ” (or kappa) is the strength of the grating.

Furthermore, the index and gain components of the grating of a distributed feedback laser (DFB) are found to function differently and when the operation of a grating is described mathematically, for example when it is modelled, they are described as orthogonal properties using complex number notation as  $k = j \text{ kgain}$  (where  $j$  or  $i$  is used to denote the square root of -1).  $L$  is the length of the DFB waveguide and  $\text{Im}(x)$  denotes the imaginary component of a complex number. Thus, in Claim 1, one skilled in the art will readily recognize that the term “ $\text{Im}(kL)$ ” = “ $\text{Im}(j \text{ kgain } L)$ ” which equals  $\text{kgain } L$ .

Accordingly, Applicant contends Claim 1 is definite and one skilled in the art would readily recognize the meets and bounds of an invention defined by Claim 1. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of Claim 1 under 35 U.S.C. § 112.

**Claim Rejections under 35 U.S.C. § 102**

Claims 1, 3, and 5-7 stand rejected under 35 U.S.C. § 102(a) as being anticipated by the publication entitled “Enhanced Performance of Uncooled Strongly Gain Coupled MQW DFB Lasers in 10GB/s Link Applications” presented at the European Conference for Optical Communications in the fall of 2001, hereinafter “White, *et al.*”. Applicant respectfully traverses this rejection in light of the enclosed Declaration pursuant to 37 C.F.R. § 1.132 to establish the patentability of Claims 1, 3, and 5-7 now pending in this application.

Mr. John Kenton White, the Applicant and sole inventor of the instant application asserts he conceived and invented the subject matter discussed in the White, *et al.* reference and relied upon by the Examiner to reject Claims 1, 3, and 5-7. Accordingly, Applicant contends that the submitted Declaration pursuant to 37 C.F.R. § 1.132 overcomes the rejection of Claims 1, 3, and 5-7 as being anticipated by the White, *et al.* reference by establishing fact that the subject matter relied on in the White, *et al.* reference was the invention of Mr. John Kenton White, the Applicant and sole inventor of the instant application. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection of Claims 1, 3 and 5-7 under 35 U.S.C. § 102(a).

**CONCLUSION**

In view of the above, each of the presently pending claims in this application is believed to be in condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue. If, however, the Examiner considers that further obstacles to allowance of these claims persist, we invite a telephone call to Applicant's representative.

Dated: May 25, 2005

Respectfully submitted,

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